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INTRACARDIAC ECHOCARDIOGRAPHY GUIDED TRANSFEMORAL TRANSCATHETER AORTIC VALVE REPLACEMENT WITHOUT ENDOTRACHEAL INTUBATION

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Peripheral and Vascular Biology
Abstract Category: 30. TCT@ACC-i2: Aortic Valve Disease
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Background: Intracardiac echocardiography (ICE) has demonstrated to provide comparable diagnostic image to transesophageal echocardiography (TEE) during transcatheter aortic valve replacement (TAVR). The purpose of this study is to evaluate a feasibility of ICE guided transfemoral (TF) TAVR with deep conscious sedation and local anesthesia.

Methods: From January 2014 to September 2014, a total of 18 patients with severe symptomatic aortic stenosis selectively underwent TF TAVR using the ICE (ACUSON AcuNav V™, SIEMENS) as an adjunctive imaging modality. All cases were performed under deep conscious sedation and local anesthesia with back-up plan of endotracheal intubation if necessary. Subjects were selected based on consensus decision of multidisciplinary TAVR team. The patients with potential difficulty to emergently secure an airway or those who required TEE to determine the size of bioprosthesis immediately prior to TAVR were essentially excluded from the study.

Results: All patients successfully underwent ICE guided TF TAVR using either balloon expandable (n= 16) or self-expandable device (n=2) without emergent endotracheal intubation. Mean age, STS score and EuroScore II of patients were 85.2 ± 7.7 year-old, 7.2 ± 4.6 and 11.8 ± 10.9, respectively, and 56% (10/18) of the patients was male with mean body mass index of 26.7 ± 4.4. Immediately after valve replacement, 3 patients underwent post dilatation due to moderate paravalvular leak demonstrated by the ICE. Brief TEE was performed in another patient to confirm ICE findings. Immediately post TAVR, one patient underwent peripheral intervention due to stenosis of arterial access for valve deployment. Two patients received transfusion of packed red cell less than 3 units. There was no major bleeding or in-hospital death. Median hospital stay post TAVR was 2 days.

Conclusion: In selective patients who are deemed appropriate by the multidisciplinary TAVR team, the ICE guided TF TAVR without endotracheal intubation is an extremely feasible approach while maintaining peri-procedural safety. The ICE can be a valuable imaging tool for TAVR to evaluate prosthesis function immediately after valve replacement.